

LISTING OF THE CLAIMS:

1-11. (canceled)

12. (currently amended) An exhaust aftertreatment system for an internal combustion engine having at least one cylinder and a catalytic converter disposed in an exhaust duct of the engine which receives an exhaust gas stream from the engine, comprising: a trap disposed in the exhaust duct located upstream of the catalytic converter, said trap is comprised of channels through which the exhaust gas stream flows, said channels being irregular in cross-section wherein a trajectory of a centerline of said channels is random from an upstream face of said trap to a downstream face of said trap and a total volume of said channels comprises more than 90% of the total volume of said trap ~~The exhaust aftertreatment system of claim 10, wherein~~ the engine has one or more pistons reciprocating within one or more cylinders, said porous material has a mass, in grams, which is less than a displacement, in cubic centimeters, of the cylinders coupled to said phosphorus trap divided by 25.

13-19. (canceled)

20. (previously amended) An exhaust aftertreatment system for processing exhaust gases from an internal combustion engine, comprising a catalytic converter disposed in an exhaust duct of the engine, said catalytic converter has channels for conducting exhaust gases from an upstream end of said catalytic converter to a downstream end of said catalytic converter, said channels are substantially parallel to each other and parallel to a direction of flow through said catalytic converter, said catalytic converter has a ceramic or metallic porous foam material having a plurality of irregularly shaped passages disposed within said channels from said upstream end of said catalytic converter for a predetermined distance along said catalytic converter wherein walls of such passageways being provided by the foam material, such walls being substantially thinner than such passageways.

21. (previously amended) The exhaust aftertreatment system of claim 20, said porous material has a pore size greater than about 20 micrometers and average pore size greater than about 80 micrometers.

22. (original) The exhaust aftertreatment system of claim 20, said predetermined distance is less than one-third of a length of said catalytic converter.

23. (original) The exhaust aftertreatment system of claim 20, said predetermined distance is based on a cross-sectional area of said catalytic converter and a swept volume of the engine, said swept volume is a total volume through which pistons of the engine reciprocate.

24. (original) The exhaust aftertreatment system of claim 23, said predetermined distance is less than 15% of said swept volume divided by said cross-sectional area.

25. (original) An exhaust aftertreatment system for a reciprocating internal combustion engine, comprising:

a phosphorus trap disposed in an exhaust duct of the engine, said trap is comprised of a porous material substantially filling the cross-section of the exhaust duct, said porous material has an average pore size greater than a predetermined pore size, said porous material has randomly oriented passageways forcing exhaust gases passing through said porous material to undergo multiple turns so that phosphorous containing materials are trapped in said phosphorous trap;

a catalytic converter disposed in said exhaust duct of the engine located downstream of said phosphorus trap; and

an electronic control unit operably connected to the engine, said electronic control unit provides an indication of an amount of said trapped phosphorous and raises temperature in said phosphorous trap above a

predetermined temperature when said amount of phosphorous containing material exceeds a predetermined quantity.

26. (original) The system of claim 25 wherein said indication is based on a time of engine operation since temperature in said phosphorus trap last exceeded said predetermined temperature.

27. (original) The system of claim 25 wherein said indication is based on engine speed since temperature in said phosphorus trap last exceeded said predetermined temperature.

28. (original) The system of claim 25 wherein said predetermined temperature is greater than 225 degrees Celsius.

29. (original) The system of claim 25 wherein said engine is a spark ignition engine and a spark ignition timing of the engine is retarded to cause said rise in temperature in said phosphorus trap.

30. (original) The system of claim 25 wherein a speed of the engine is increased to cause said rise in temperature in said phosphorus trap.

31. (previously amended) The system of claim 25, said predetermined pore size is greater than 80 micrometers.

32-38. (canceled)